

Amendments to the Claims

Listing of the Claims:

This Listing of the Claims will replace all prior versions, and listings of the claims in the application.

1-99 (canceled).

100. (currently amended): A hapten-carrier conjugate comprising

at least one hapten derived from nicotine, wherein the hapten has the structure of nicotine-1'-N-oxide, trans-3'-hydroxycotinine or nicotine glucoronide; and

at least one carrier containing a T cell epitope and

wherein said hapten and said carrier are linked by a branch selected from the group of chemical moieties identified by CJ reference number consisting of:

CJ 0	Q
CJ 1	(CH ₂) _n Q
CJ 1.1	CO ₂ Q
CJ 1.2	COQ
CJ 1.3	OCH ₃
CJ 2	OCO(CH ₂) _n Q
CJ 2.1	OCOCH=Q
CJ 2.2	OCOCH(O)CH ₂
CJ 2.3	OCO(CH ₂) _n CH(O)CH ₂
CJ 3	CO(CH ₂) _n COQ
CJ 3.1	CO(CH ₂) _n CNQ
CJ 4	OCO(CH ₂) _n COQ
CJ 4.1	OCO(CH ₂) _n CNQ
CJ 5	CH ₂ OCO(CH ₂) _n COQ
CJ 5.1	CH ₂ OCO(CH ₂) _n CNQ
CJ 6	CONH(CH ₂) _n Q
CJ 7	Y(CH ₂) _n Q
CJ 7.1	CH ₂ Y(CH ₂) _n Q
CJ 8	OCOCH(OH)CH ₂ Q
CJ 8.1	OCO(CH ₂) _n CH(OH)CH ₂ Q
CJ 9	OCOC ₆ H ₅
CJ 10	as identified in the application as FIG. 2b 1b
CJ 11	YCO(CH ₂) _n COQ;

and wherein n is an integer; Y is S, O, or NH; and Q is the carrier.

101. (currently amended): The hapten-carrier conjugate of claim 100, wherein n is from ~~about 3~~ 2 to ~~about 20~~.

102. (canceled)

103. (previously presented): The hapten-carrier conjugate of claim 100, wherein said carrier is selected from: proteins or peptides, bacterial toxins or products, subvirals, lectins, allergens and fragments of allergens, malarial protein antigen, artificial multi-antigenic peptides, and modifications, analogs and derivatives thereof.

104. (original) The hapten-carrier conjugate of claim 100, wherein greater than one hapten is coupled to the carrier.

Claims 105-108. (canceled)

109. (previously presented): A pharmaceutical preparation comprising the hapten-carrier conjugate of claim 100, and a pharmaceutically acceptable excipient.

110. (canceled).

111. (previously presented): The hapten-carrier conjugate of claim 101, wherein said carrier is proteins or peptides, bacterial toxins or products, subvirals, lectins, allergens and fragments of allergens, malarial protein antigen, artificial multi-antigenic peptides, and modifications, analogs and derivatives thereof.

112. (previously presented): The hapten-carrier conjugate of claim 100, wherein said carrier is cholera toxin B, diphtheria toxin, tetanus toxoid, pertussis toxin, filamentous hemagglutinin, Shiga toxin, pseudomonas exotoxin, ricin B subunit, abrin, sweet pea lectin,

retrovirus nucleoprotein, rabies nucleoprotein, tobacco mosaic virus, cauliflower mosaic virus, vesicular stomatitis virus-nucleocapsid protein, poxvirus subunit, Semliki forest virus vector or yeast virus-like particle.

113. (previously presented): The hapten-carrier conjugate of claim 101, wherein the carrier is cholera toxin B, diphtheria toxin, tetanus toxoid, pertussis toxin, filamentous hemagglutinin, Shiga toxin, pseudomonas exotoxin, ricin B subunit, abrin, sweet pea lectin, retrovirus nucleoprotein, rabies nucleoprotein, tobacco mosaic virus, cauliflower mosaic virus, vesicular stomatitis virus-nucleocapsid protein, poxvirus subunit, Semliki forest virus vector or yeast virus-like particle.

Claims 114-116 (canceled)

117. (previously presented): The pharmaceutical preparation of claim 109 further comprising an adjuvant.

118. (currently amended): The pharmaceutical preparation of claim 117, wherein the adjuvant is alum, MF59 or RIBI ~~R1B1~~ adjuvant.

119. (previously presented): The pharmaceutical preparation of claim 118, wherein the alum is aluminum hydroxide or aluminum phosphate.

120. (previously presented): The pharmaceutical preparation of claim 109 further comprising an auxiliary agent or supplementary active compound.

121. (previously presented): The pharmaceutical preparation of claim 109 which is suitable for parenteral administration to a human.

122. (previously presented): The pharmaceutical preparation of claim 109 which is suitable for oral, dermal or topical administration to a human.

123. (previously presented): A pharmaceutical preparation comprising the hapten-carrier conjugate of claim 112, and a pharmaceutically acceptable excipient.

124. (previously presented): The pharmaceutical preparation of claim 123 further comprising an adjuvant.

125. (new): A hapten-carrier conjugate comprising
at least one hapten derived from nicotine, wherein the hapten is nicotine; and
at least one carrier containing a T cell epitope and
wherein said hapten and said carrier are linked by a branch selected from the group of
chemical moieties identified by CJ reference number consisting of:

CJ 0	Q
CJ 1	$(\text{CH}_2)_n\text{Q}$
CJ 1.1	CO_2Q
CJ 1.2	COQ
CJ 1.3	OCH_3
CJ 2	$\text{OCO}(\text{CH}_2)_n\text{Q}$
CJ 2.1	$\text{OCOCH}=\text{Q}$
CJ 2.2	$\text{OCOCH}(\text{O})\text{CH}_2$
CJ 2.3	$\text{OCO}(\text{CH}_2)_n\text{CH}(\text{O})\text{CH}_2$
CJ 3	$\text{CO}(\text{CH}_2)_n\text{COQ}$
CJ 3.1	$\text{CO}(\text{CH}_2)_n\text{CNQ}$
CJ 4	$\text{OCO}(\text{CH}_2)_n\text{COQ}$
CJ 4.1	$\text{OCO}(\text{CH}_2)_n\text{CNQ}$
CJ 5	$\text{CH}_2\text{OCO}(\text{CH}_2)_n\text{COQ}$
CJ 5.1	$\text{CH}_2\text{OCO}(\text{CH}_2)_n\text{CNQ}$
CJ 6	$\text{CONH}(\text{CH}_2)_n\text{Q}$
CJ 7	$\text{Y}(\text{CH}_2)_n\text{Q}$
CJ 7.1	$\text{CH}_2\text{Y}(\text{CH}_2)_n\text{Q}$
CJ 8	$\text{OCOCH}(\text{OH})\text{CH}_2\text{Q}$
CJ 8.1	$\text{OCO}(\text{CH}_2)_n\text{CH}(\text{OH})\text{CH}_2\text{Q}$
CJ 9	OCOC_6H_5
CJ 10	as identified in the application as FIG. 2b

and wherein n is an integer; Y is S, O, or NH; and Q is the carrier.

126. (new): The hapten-carrier conjugate of claim 125, wherein n is from 3 to 20.

127. (new): The hapten-carrier conjugate of claim 125, wherein said carrier is selected from: proteins or peptides, bacterial toxins or products, subvirals, lectins, allergens and fragments of allergens, malarial protein antigen, artificial multi-antigenic peptides, and modifications, analogs and derivatives thereof.

128. (new): The hapten-carrier conjugate of claim 125, wherein greater than one hapten is coupled to the carrier.

129. (new): The hapten-carrier conjugate of claim 125, wherein the carrier is cholera toxin B, diphtheria toxin, tetanus toxoid, pertussis toxin, filamentous hemagglutinin, Shiga toxin, pseudomonas exotoxin, ricin B subunit, abrin, sweet pea lectin, retrovirus nucleoprotein, rabies nucleoprotein, tobacco mosaic virus, cauliflower mosaic virus, vesicular stomatitis virus-nucleocapsid protein, poxvirus subunit, Semliki forest virus vector or yeast virus-like particle.

130. (new): The hapten-carrier conjugate of claim 129, wherein said carrier is cholera toxin B, diphtheria toxin, tetanus toxoid, pertussis toxin, ricin B subunit, abrin, sweet pea lectin, retrovirus nucleoprotein, rabies nucleoprotein, tobacco mosaic virus, vesicular stomatitis virus-nucleocapsid protein, or poxvirus subunit.

131. (new): A pharmaceutical preparation comprising the hapten-carrier conjugate of claim 125, and a pharmaceutically acceptable excipient.

132. (new): The pharmaceutical preparation of claim 131, further comprising an adjuvant.

133. (new): The pharmaceutical preparation of claim 132, wherein the adjuvant is alum or RIBI adjuvant.

134. (new): The pharmaceutical preparation of claim 133, wherein the adjuvant is alum.

135. (new): The pharmaceutical preparation of claim 134, wherein the alum is aluminum hydroxide or aluminum phosphate.

136. (new): The pharmaceutical preparation of claim 131, further comprising an auxiliary agent or supplementary active compound.

137. (new): The pharmaceutical preparation of claim 131 which is suitable for parenteral administration to a human.

138. (new): The pharmaceutical preparation of claim 131 which is suitable for oral, dermal or topical administration to a human.

139. (new): A pharmaceutical preparation comprising the hapten-carrier conjugate of claim 130, and a pharmaceutically acceptable excipient.

140. (new): The pharmaceutical preparation of claim 139 further comprising an adjuvant.